Phonological priming effects

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Published in:
Bulletin of the Psychonomic Society

Publication date:
1991

ical decision task or a numbers inequalities task. Cuing effects were additive with manipulations of task difficulty, such as word frequency and numerical distance between the digits. These results suggest that when cues were invalid, processing on the actual task presented could not begin until the incorrect task set was abandoned, and the correct task set was loaded. Implications for strategic involvement in speeded tasks are considered.

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Attentional Mechanisms in Processing Hierarchical Patterns. LYNN ROBERTSON, *University of California, Davis, and VAMC, Martinez*, & ROBERT EGLY, *University of California, Davis*—Evidence will be presented for two separate attentional mechanisms that can influence response time in analyzing hierarchical patterns (Navon, 1977). One mechanism allocates attentional resources categorically to global and local levels, producing cost/benefit tradeoffs as target level probability changes over a block of trials. The other mechanism influences the diameter of an attentional window on a trial-by-trial basis, producing benefits for all targets within it. The relevance of these findings in interpreting parietal lobe damage and attentional dysfunction will be discussed.

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Disengaging from the Disengage Mechanism: A Reinterpretation of Parietal Deficits. JONATHAN D. COHEN & MARTHA J. FARAH, *Carnegie-Mellon University* (sponsored by James L. McClelland)—In a spatially cued simple RT task, parietal-damaged patients respond abnormally to targets presented in the affected field when preceded by a cue in the intact field. The inability of such targets to disengage attention has been interpreted as evidence for a distinct "disengage" mechanism. We demonstrate, through the use of computer simulation models, that identical deficits can arise by lesioning a system characterized by interactivity and competition, but which does not contain any "disengage" mechanism.

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The Influence of Phonotactic Constraints on Phonetic Coding. CAROL A. WANNEMACHER & JAMES R. SAWUSCH, *SUNY at Buffalo* (presented by James R. Sawusch)—Previous studies demonstrate that the perception of ambiguous phonemes is altered by the surrounding phonetic context to produce percepts consistent with the phonotactic constraints of the language. The influence of phonotactics was examined using speeded classification of synthetic series in which the constraining phonemes occurred either before or after the target. Results will be presented on the time course of phonotactic effects, the role of phoneme intelligibility, and their implications for models of speech perception.

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Phonological Priming Effects: A Function of Lexical Stress? BÉATRICE DE GELDER & JEAN VROOMEN, *Tilburg University* (sponsored by Paul Bertelson)—Effects of phonological priming on an auditory lexical decision task were examined in Dutch. Recognition of word targets is inhibited by word primes. The size of the effect is a function of the stress pattern of the prime. First-syllable-stressed primes lead to the strongest inhibition provided that the initial phoneme group shared by prime and target is a syllable (as opposed to consisting of the same initial phonemes but not making a syllable).

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Combining Isolable Physical and Semantic Codes. PETER GROSSENBACHER, PAUL COMPTON, MICHAEL I. POSNER, & DON TUCKER, *University of Oregon* (presented by Michael I. Posner)—How are different codes of a visual stimulus bound together into a common representation? We have approached this problem for the visual and semantic codes of words with both cognitive and electrophysiological methods. We have found that the processing of semantic and visual codes overlap heavily in time, while they maintain their separate anatomy. We consider the role of attention in amplifying, speeding, and conjoining these distinct but interacting computations.

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All-or-None Versus a Graded Process Conception of Attention. LISA R. FOURNIER & CHARLES W. ERIKSEN, *University of Illinois at Champaign* (presented by Charles W. Eriksen)—To determine whether attention is a gradual or all-or-none process, attention was directed to one stimulus in a multiletter display by a precue (0-200 msec before display onset). Stimuli varied in size, shape, and color. Subjects looked for 1, 2, or 3 specific cued stimulus features and indicated their presence or absence using choice RT. Results supported a gradual attention process. Also, consistent with template theory, detection performance increased as the features to be identified increased.

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Symmetry, Perception, and Figure-Ground Parsing in Neglect. JON DRIVER, *University of Cambridge*, ROBERT RAFAL, *University of California, San Diego, and VAMC, Martinez*, & GORDON C. BAYLIS, *University of California, San Diego* (presented by Gordon C. Baylis)—Recent views of visual attention suggest that visual scenes are first parsed into candidate objects to which attention is directed. The attentional deficit of a patient with RH damage supports this. The patient neglected the left half of objects and was consequently unable to judge symmetry about the vertical. Nevertheless, symmetry of shapes had normal effects on his figure-ground segregation. Both sides of shapes were available for preattentive parsing, prior to the operation of neglect.

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Superimposed Information Displays: Attentional Deficits and Potential Solutions. DAVID C. FOYLE, *NASA-Ames Research Center*, ROBERT S. McCANN, *Sterling Federal Systems*, & BEVERLY D. SANFORD, *San Jose State University* (sponsored by Stephen R. Ellis)—Head-up displays (HUDs) superimpose display information on the outside world such that both information sources are in the pilot's field of view. However, studies have shown that people may not process simultaneously both the superimposed and out-the-window information. We report results suggesting that cognitive and perceptual cues may cause the two sources of information to segregate, yielding a divided attention deficit. Possible solutions involving the integration of display and world information will be discussed.

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Individual Differences in Speeded Classification: An Analysis of Cognitive Style. LAURA FORD & BARBARA BURNS, *University of Louisville* (presented by Barbara Burns)—The goal of the present study was to further characterize the individual differences in information processing by highly analytic and holistic adults. Filtering, condensation, and grouping tasks were used with highly separable (circle size vs. angle), separable (color vs. form), and integral (height vs. width of rectangle) dimensional combinations. Cognitive style, as measured by Kagan's MFFT, was found to interact with both stimulus structure and task demands. Results are discussed in the context of current models of integral-to-separable processing.

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Interference and Two Measures of Implicit Memory. LAWRENCE M. SCHOEN & BEN T. BROWN, *Lake Forest College* (sponsored by Richard Jackson Harris)—Subjects were given a traditional interference task, learning three 20-item word lists. After each list they solved word puzzles (anagrams or fragments). Priming of puzzles occurred in either the first or third word list, with the primed puzzles appearing in either the first or third puzzle list. Interference from the explicit recall task influenced solution rates of the implicit task, both for type of measure and among the three presentation combinations of prime/test.

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Limits of Structural Complexity in Implicit Sequence Learning. PEDER J. JOHNSON, JONATHAN REED, & PHILIP KRAGNES, *University of New Mexico*—Cohen, Ivry, and Keele (1990) reported that when subjects were engaged in a secondary tone-counting task, implicit learning of sequences was limited to first-order conditionals (e.g., each response is determined by the previous response). Using this dual-task procedure, we found that subjects were able to learn both first- and second-order conditionals (i.e., response determined by previous two responses). Results are discussed in terms of those aspects of sequence complexity that are related to difficulty of implicit learning.

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The Components of Recollective Experience: Remembering and Knowing. SUPARNA RAJARAM, *Temple University School of Medi-*